DC400i Visualiser

Document Camera

Please read this manual carefully before operating the document camera and keep it for reference

USER MANUAL

Safety Measures

Notice: PLEASE READ CAREFULLY BEFORE USE

Use the document camera (Visualiser) under the rated electric conditions.

Do not place the document camera (Visualiser) on an unstable surface. It may fall causing injury or damage.

Do not place this device directly under sunlight or near heaters.

Do not place this device near water.

Keep the camera away from acid or alkali gas.

Do not place this document camera (Visualiser) in humid, dusty, windy or vibrant locations.

The recommended operating environment is:

Temperature: 0ºC—45ºC (32ºF-113ºF)

Humidity: less than 75%

Always unplug BEFORE cleaning the device. Use a damp soft-cloth for cleaning. Do not use volatile solvent.

When this equipment functions abnormally, such as smoke, smell, noise, immediately unplug and call for professional assistance.

Unplug the document camera (Visualiser) when not in use.

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INTRODUCTION

Thank you for purchasing this product, with sensible use it will give years of good service.

Like many of us, referring to the user manual is often a last resort so we recommend you make an electronic copy and a hard copy for future reference.

We have designed the product so that it's easy to understand and operate. Most of the core functions can be operated from the Visualiser front panel, leaving some of the special functions such as freeze, mirror, image store and rotate on the remote. It's therefore important that you take care of the remote

We hope you enjoy using the product.

5 Year Warranty

Warranties give you peace of mind, even so, you need to take care of your DC400i and understand what's covered and what's not.

What's covered?

In general the unit is covered by a 5 year warranty which takes into consideration failures which are outside of your control.

What's not covered?

- Physical damage / abuse
- Fluid ingress
- Broken cables due to twisting / excessive force

For full warranty details please visit www.optomaeurope.com

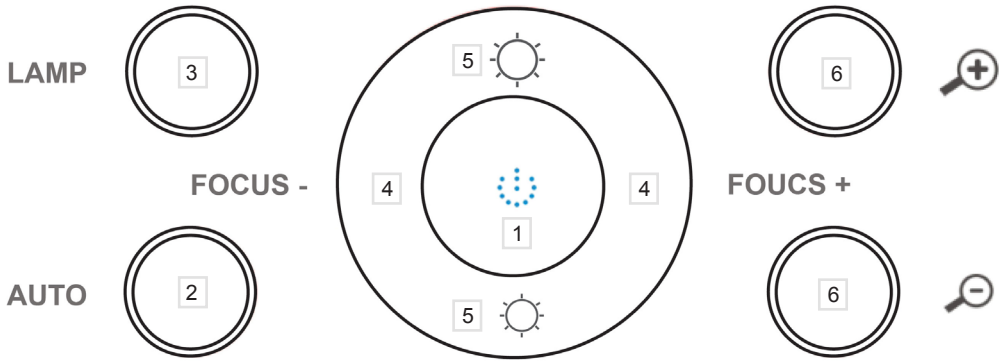
Compliant

The DC400i is RoHS compliant, which means it meets the rigorous European Union's requirements for restriction of the use of certain hazardous substances in electrical and electronic equipment.

PARTS IDENTIFICATION

Parts Identification	
Camera	1
LED light	2
Flexible camera arm	3
IR receiver for Remote Control	4
Control panel	5
SD Card Slot	6
Interface panel (HDMI, VGA Out & Past Through ports plus USB2)	7
Mains Input & Kensington lock	8

CONTROL PANEL

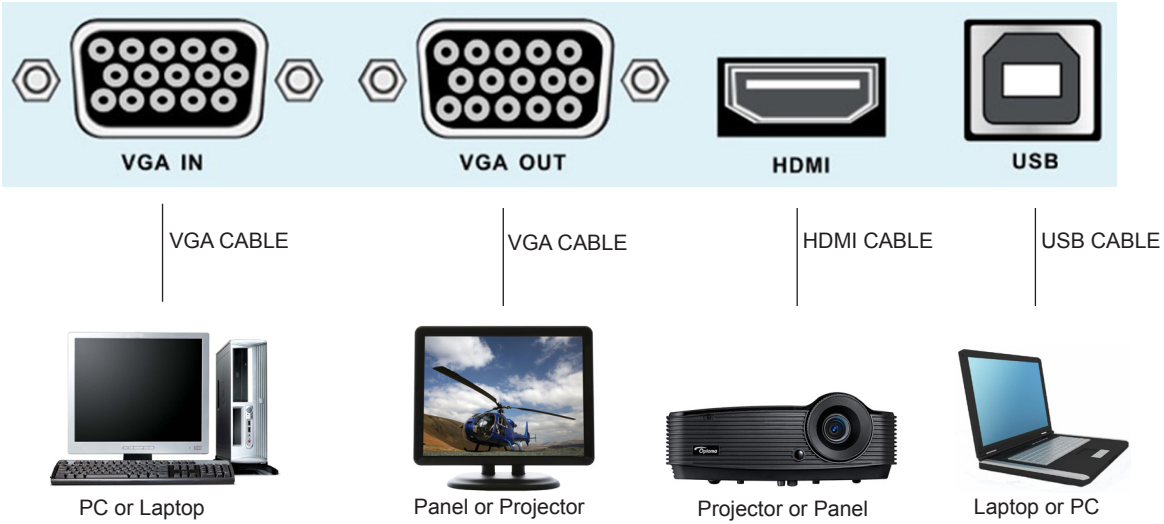


Control Panel	
Power [Turn on/off power]	1
Auto [Auto focus, color adjustment and white balance]	2
Lamp [Turn on/off LED light]	3
FOCUS+/- [Adjust focus manually, focus far and focus near]	4
BRIGHT+/- [Image brightness control]	5
ZOOM+/- [Image zoom-in and zoom-out control]	6

INPUTS AND OUTPUTS (I/O's)

Input / Output panel
VGA IN [VGA (RGB) signal input (15 pin D-SUB)]
VGA OUT [VGA (RGB) signal output (15 pin D-SUB)]
HDMI [HDMI signal output]
USB2 [USB2 slave, used to connect with PC/Laptop]
SD CARD [SD card slot. (32 GB Max)]

CONNECTIONS



CONNECTIONS
VGA IN [VGA-in from PC/Laptop]
VGA OUT [VGA-Out to Panel or Projector]
HDMI [HDMI-Out to Projector or Panel]
USB2 [USB2 slave, used to connect with PC/Laptop]

REMOTE CONTROL

Remote Functions
Power [Power ON/OFF]
FPS [Switch the frame rate between 20 (Visualizer mode) and 30 (video mode)]
RES [Toggles output resolutions: SXGA, UXGA, 720P and 1080p]
USB [Switch USB functions between “Disk mode” and “Video mode”, use the buttons ☼+ and ☼− to select, then press ENTER to confirm]
DEL [Press to delete the selected pictures, keep pressed for 2 seconds to delete all saved pictures]
Bright +/- [Image brightness control use ☼+ and ☼− to adjust]
Focus+/- [Adjust focus manually with + and − then press ENTER to confirm]
RECALL [Press to view your saved images, use the buttons ☼+ and ☼− to change pages and use buttons + and − to select your picture choice then press ENTER to confirm. In recall mode press + or − to zoom the image in or out. You can also use buttons ☼+ and ☼− plus + and − to move the image]
The 📷 button allows you to take a snap shoot of your image and save this to either SD Card or Internal memory. (200 images can be saved to internal memory) but a lot more if using a SD CARD, the amount is dependent on the cards size i.e. up to (32 GB).
AUTO Adjusts white balance and focus automatically.
Zoom +/- Zoom in/out control using + or − buttons.
MIR Use this button MIR to flip the camera image.
Split Use the Split button ▯▯ to have two images on your screen.
Freeze Use the Freeze/Unfreeze button ❄ to freeze/unfreeze an image.
TITLE Title TITLE freeze mode. In this mode you can adjust the position of the frozen title with buttons ☼+ or ☼− and also adjust the size with + or −
PIP Picture in picture PIP click to select a saved picture to display on the lower right corner of a screen.
Rotation Rotate ↻ the image in 90°/180° and 270° degrees.

Visualiser Mode

The DC400i defaults to Visualiser mode each time the unit is turned on. This is the preferred mode for most applications. The DC400i can view & record video in this mode at 20/30 FPS (frames per second)..

If smoother video recording is required then switch to Video Mode.

Video Mode

OPERATING THE VISUALISER

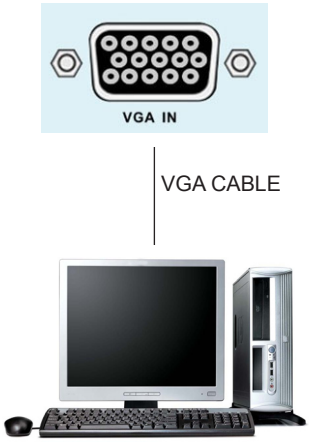
Powering on

After connecting the external power supply the red led in the center of the DC400i will flash. This indicates the unit is in standby mode. To start the Visualiser simply press the power-on button via the main control panel or the remote control. The led will turn to green. Please Note: It takes 3~4 seconds before the Visualiser is fully powered and ready to use.

Connecting the Visualiser

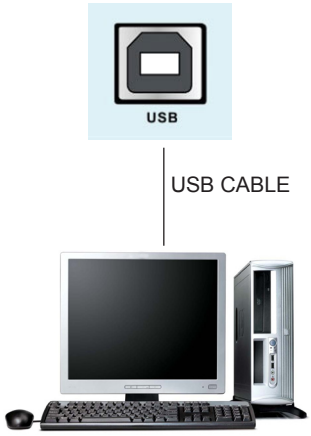
This is simplicity itself. The supplied 15 pin VGA cable connects between the Visualiser and the output devise i.e. Projector or monitor/TV via the 15pin VGA port. You can also use HDMI if your projector or panel supports this I/O. HDMI will give you a far better image and also goes up to 1080p output.

VGA In



VGA In is used to show your desktop on the camera. When you run the supplied software and show/project onto a white board it allows you to annotate over your image so you can highlight points of interest or draw over the image.

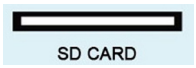
USB Connection



The **USB** port allows you to view the camera output via the PC. You will need to install the PC software which is described later in this manual.

Once connected this will allow you to record endless pictures and video files (depending on your Hard Disk capacity) the software also provides simple annotation of images.

SD CARD



You can also save images to an SD Card to review on a PC/LAPTOP or any device that reads SD Cards like the ML500 LED projector from Optoma, the max card size is 32 GB. (You cannot record video to the SD Card)

Positioning the Camera – Rotation & Mirror

Normally the camera is positioned over documents and objects alongside the Visualiser. Using the remote control you can rotate the image through 90, 180 or 270 degree increments so that the captured image appears straight to the viewer. You can also use the mirror MIR function in a similar way. Using the combination of rotation and mirror functions means you have flexibility when positioning the camera.

FEATURES

	LED LIGHT The DC400i uses eco-friendly, low power LED lamps which are cool to the touch and mercury free. Due to the excellent sensitivity of the camera the lamp is seldom required. Adjusting the light balance from the remote control can often provide clear vivid images.
	ZOOMING IN AND ZOOMING OUT With 14x optical zoom combined with 16x seamless digital zoom the DC400i enables you to view items in immense detail. DC400i's advanced optical system features high speed auto focus capability that ensures instant auto focus when you quickly zoom in and out of any object. You can also manually adjust focus to satisfy any special viewing needs by pressing ZOOM+ or ZOOM-
	FOCUS ADJUSTMENT When the Visualiser is turned on the focus automatically adjusts, it is not necessary to re-adjust the focus if you are only working with flat materials (text, photos, etc.). Only 3D objects require a focus adjustment. Press the "AUTO" button to auto focus. Press the FOCUS+ or FOCUS- buttons to focus manually. **This function is accessible from the remote control and the base unit.**
	BRIGHTNESS ADJUSTMENT You can adjust the camera brightness by pressing the BRIGHT + or BRIGHT - buttons. **This function is only accessible from the remote control.**
	WHITE BALANCE ADJUSTMENT Under different lighting conditions you may need to adjust the white balance by pressing the AUTO button. The AUTO button also assists with fine focus changes.
	FREEZE IMAGE Use FREEZE to freeze and unfreeze the image.
	MIRROR IMAGE (Only available from the remote control) MIR The mirror image function gives you a different perspective of an object.
	SPLIT SCREEN (Only available from the remote control) The split screen offers the capability of comparing two images or comparing two different views of one object side by side.
	IMAGE SAVE (Only available from the remote control) The DC400i can store up to 200 images in its internal memory.
	IMAGE RECALL (Only available from the remote control) Click the recall button to view saved images, use the buttons and to change pages and use buttons and to select your picture choice then press ENTER to confirm. In recall mode press or to zoom the image in or out. You can also use buttons and plus and to move the image.
	USB IMAGE CAPTURE AND VIDEO RECORDING The USB2 port can be used to store images and video clips from the Visualiser on your computer. (Note: You will need to install the supplied software).

COMPUTER REQUIREMENTS

The PC's hardware and software configurations shall not be less than the following requirements:

- Operating system: Windows XP/Win7/Win8
- CPU: Pentium 4 1.8Ghz or better
- Physical memory: 512M or more
- Video memory: 64M or better

Windows XP and Vista do not support USB 2 without a driver so you must install the supplied USB2 driver to get your DC400i working.

NOTE:

You can also use the camera as a webcam with software like SKYPE or some other camera software the DC400i will work with the OS built-in USB2 drivers. Just select USB or UVC Camera device.

SKYPE also works with Windows XP but you must install the USB Driver located on the DC400i's CD first

SKYPE is fully supported under- Skype – Tools – Options – Video Settings

Use the supplied USB2 cable and connect from the DC400i to a spare USB port on your PC/Laptop.

Please turn on the DC400i first so the green power-on button is on, this may take 30 or so seconds, then plug-in the USB cable so your PC/Laptop can detect a new device then run the Optoma USB software.

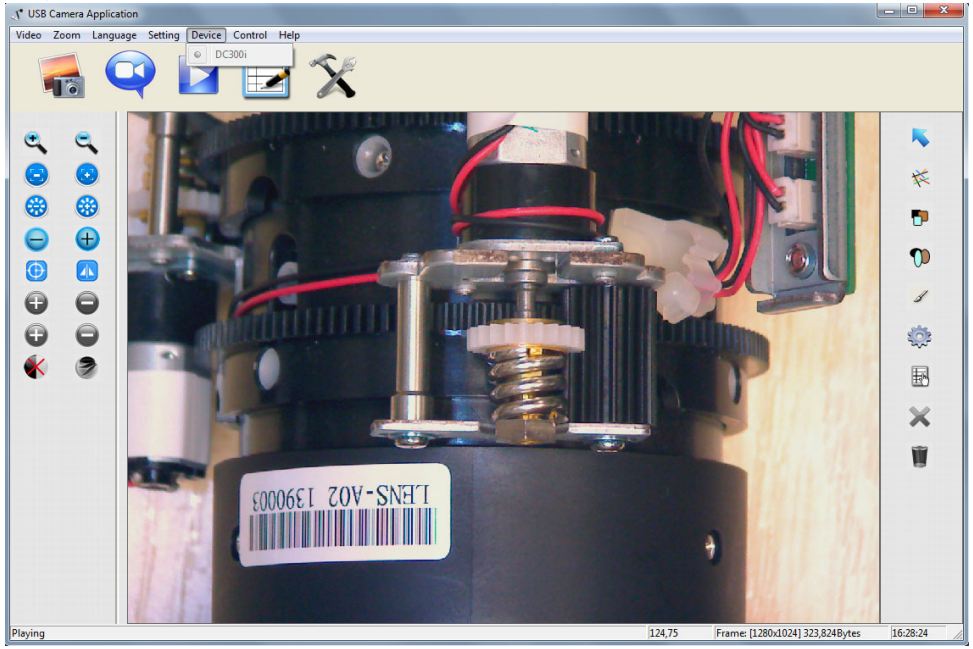
SOFTWARE START

Double click the desktop short-cut then click Device; select the right model number, as shown below, depending on which model you have this will show DC300i or DC400i. (Image 1)

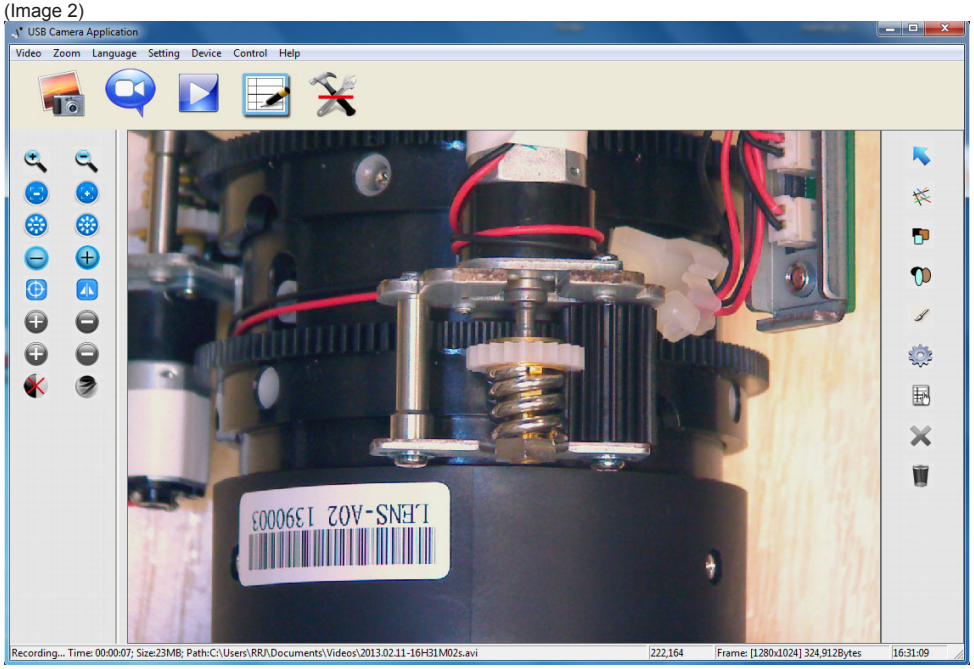
IMAGE CAPTURE AND VIDEO RECORDING

Left click to capture images. The captured images will be automatically saved into the default destination folder. The path and file name are displayed in software sta tus bar on the bottom of the window. (Image 2)

(Image 1)



(Image 2)

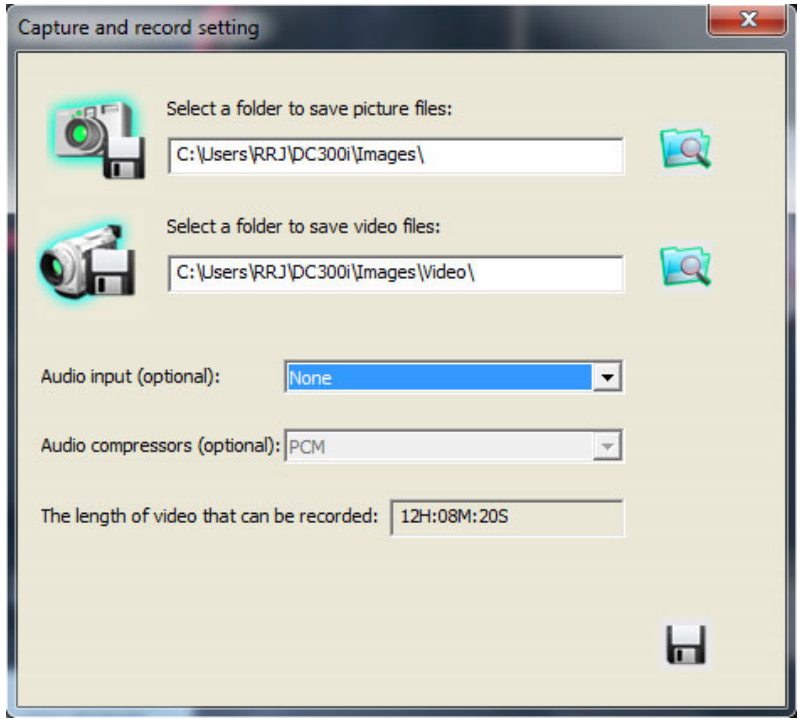


Left click to start recording. During recording the settings button will be inactive. Detailed information is displayed on the software status bar at the bottom of the window. (see image 2)

Video's are automatically saved in the default folder or pre-set folder.

SETTINGS

The captured images and recorded videos will be saved into the folders of Images and Videos respectively, which are created by the system automatically. To set a different path where you wish your image's or video saved, click on the left side of the window, a pop up dialog box appears below.



Save the captured images into a different folder

Click the button next to the "select a folder to save picture files" text box to set the path for captured images.

Save a recorded video into a different folder and set up parameters for videos

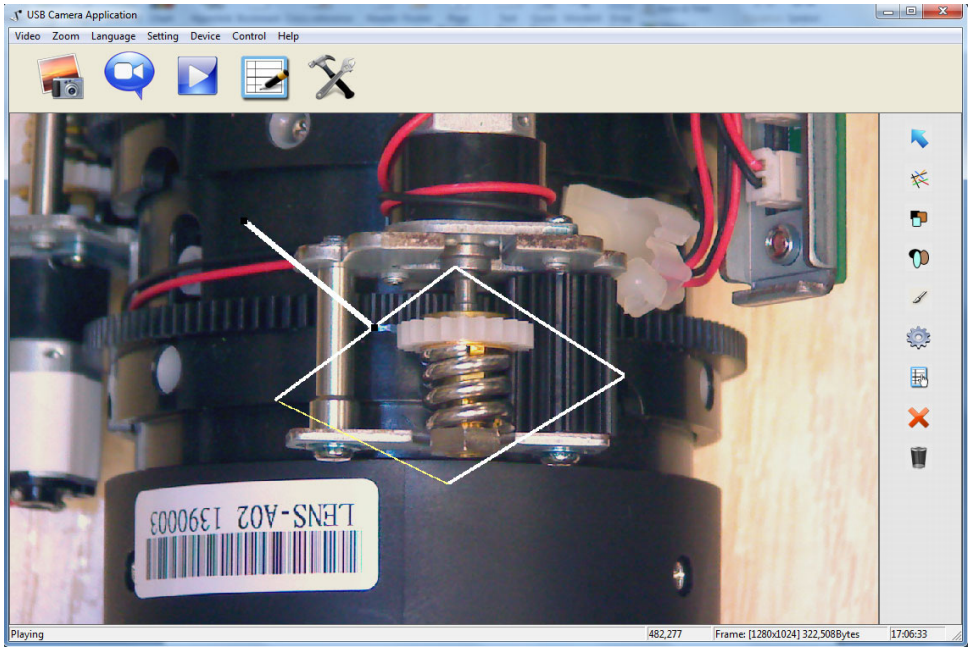
Click the button next to the "Select a folder to save video files:" text box to set the path for videos.

IMAGE MODIFY

Click you will see this interface:

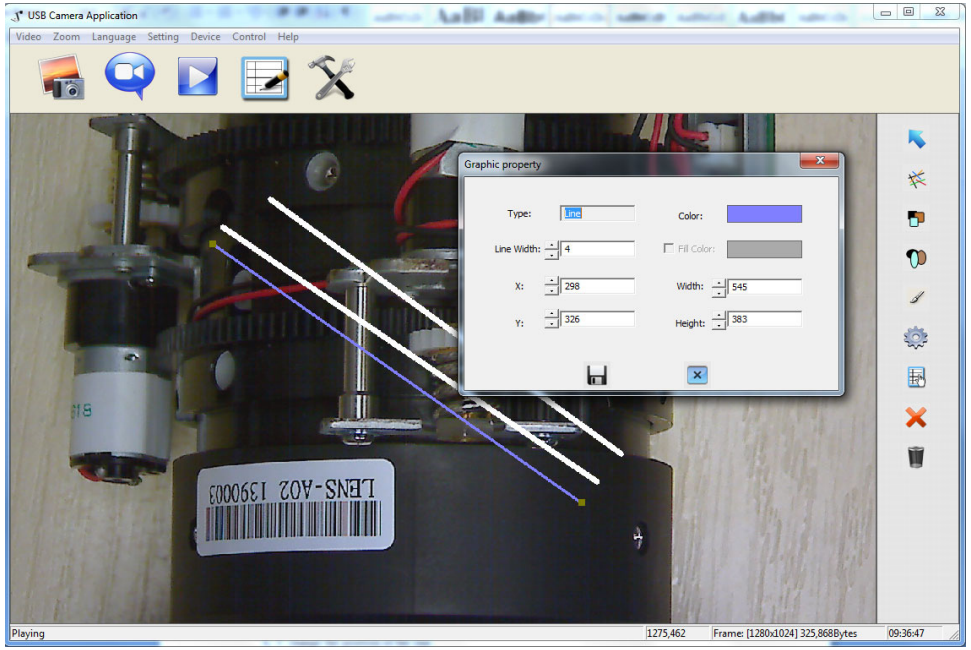
Graphic selection and move

Clicking allows to select and move lines, circles etc to a different position within the image.



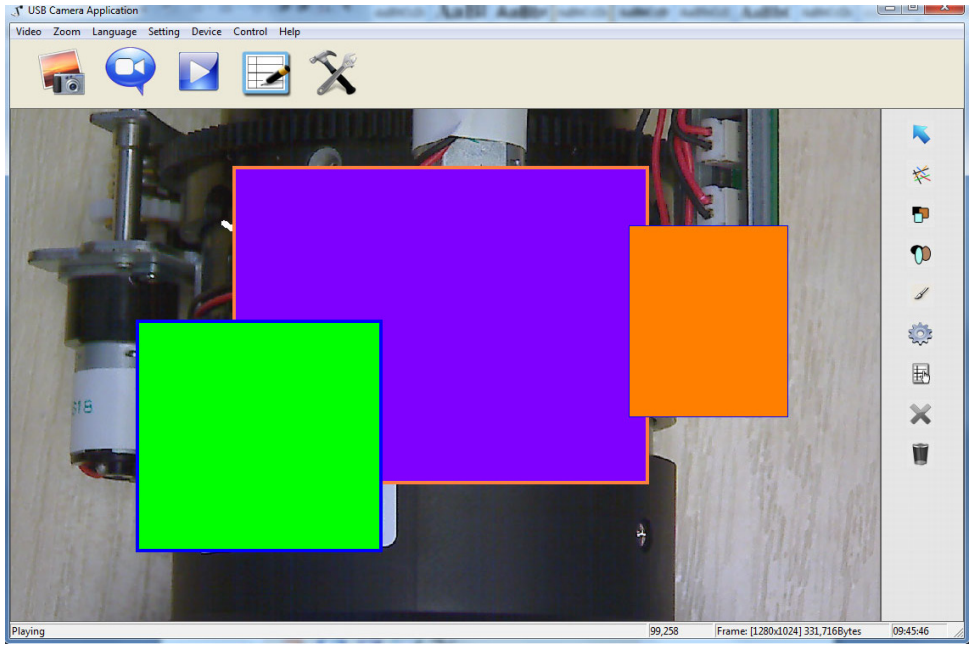
Clicking allows you to create lines within the image.

Click to change the setting of the chosen line

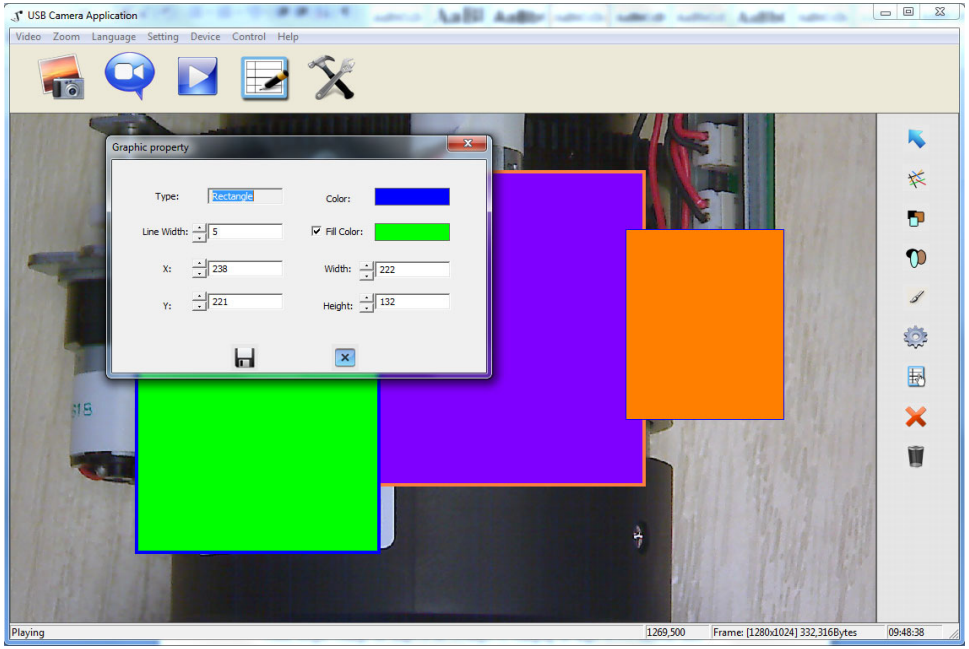


Line width change the width of the line. **X/Y** change the position of the line.
Color change the color of the line. Width, **Height** Change the angle of the line.

Click to place a rectangle in the image, shown as below

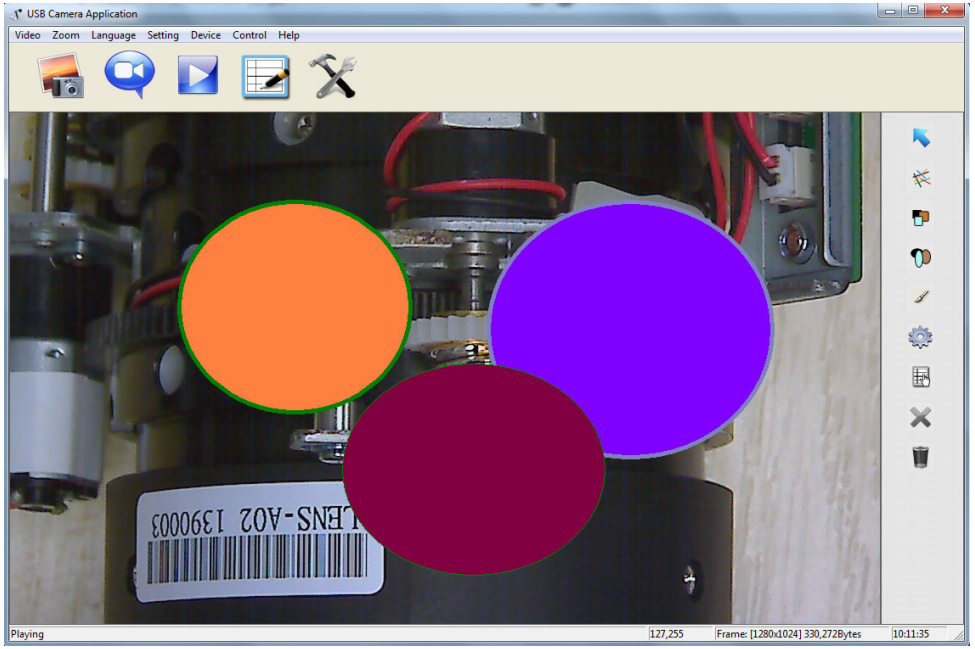


Click to change the setting of the chosen rectangle

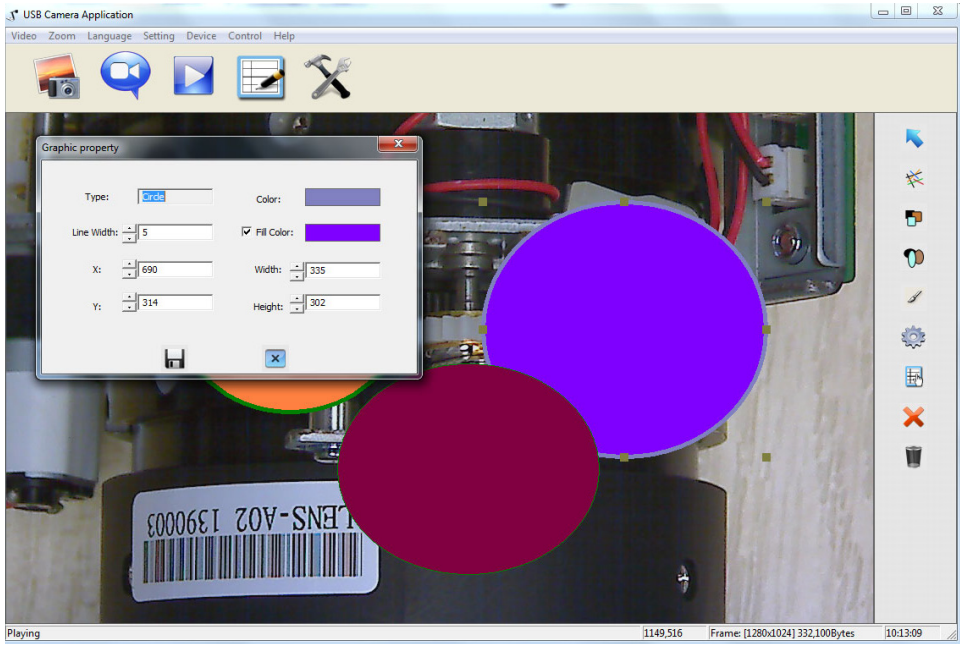


Line width change the line width of the rectangle. **X/Y** change the position of the rectangle. **Color** change the line color of the rectangle. **Fill Color** Tick it to fill color in the rectangle. Width, **Height** Change the shape of the rectangle by changing the angle of two adjacent lines of the rectangle.

Click to place a circle in the image, shown as below

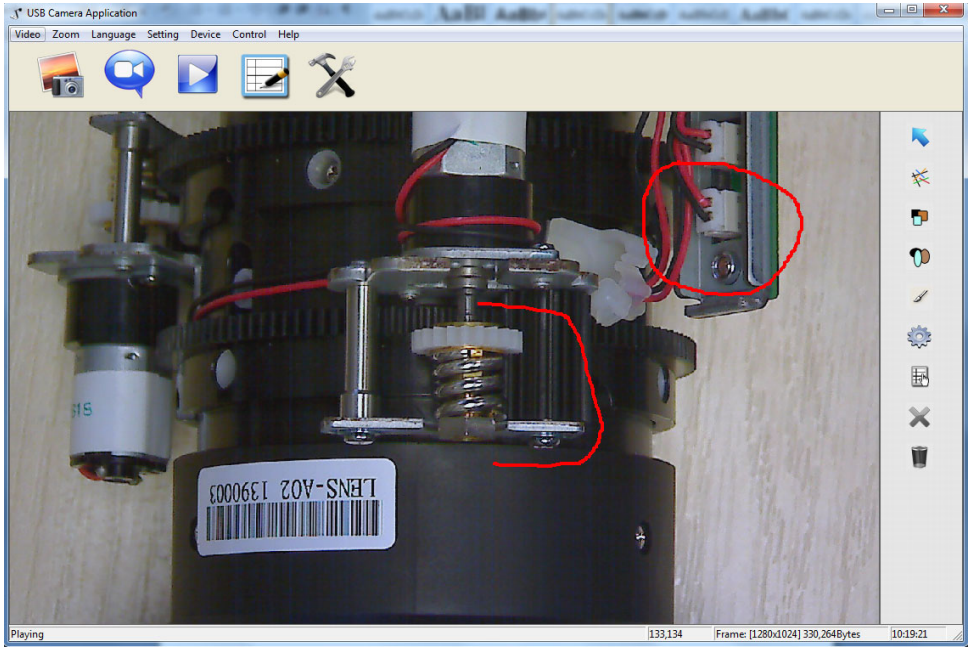


Click to change the settings of the chosen circle

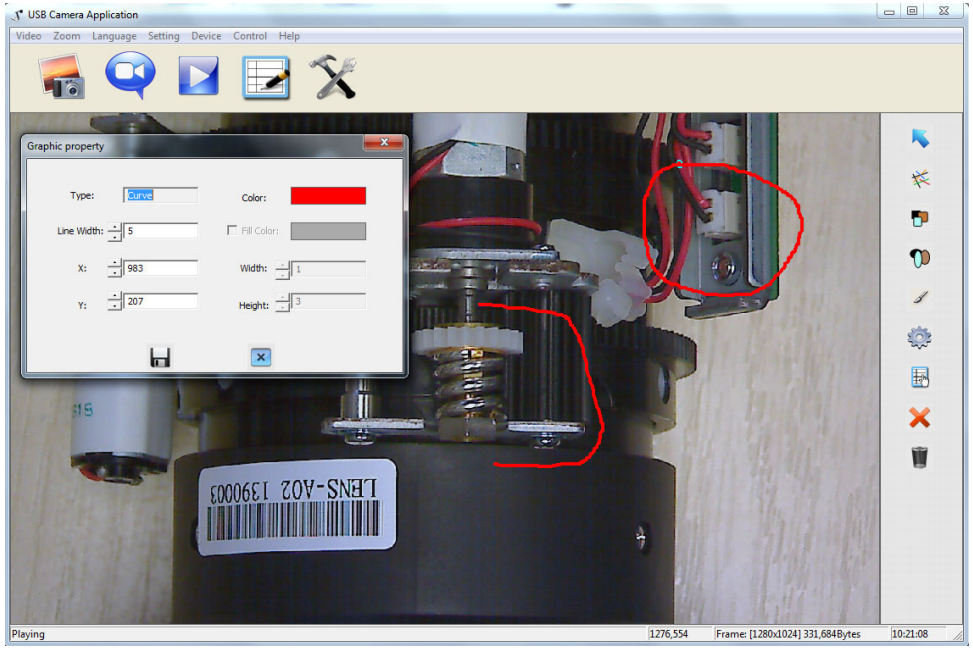


Line width change the line width of the circle. **X/Y** change the position of the circle. **Color** change the line color of the circle. **Fill Color** Tick it to fill color in the circle. Width, **Height** change the size of the circle.

Click to place a curve in the image, shown as below

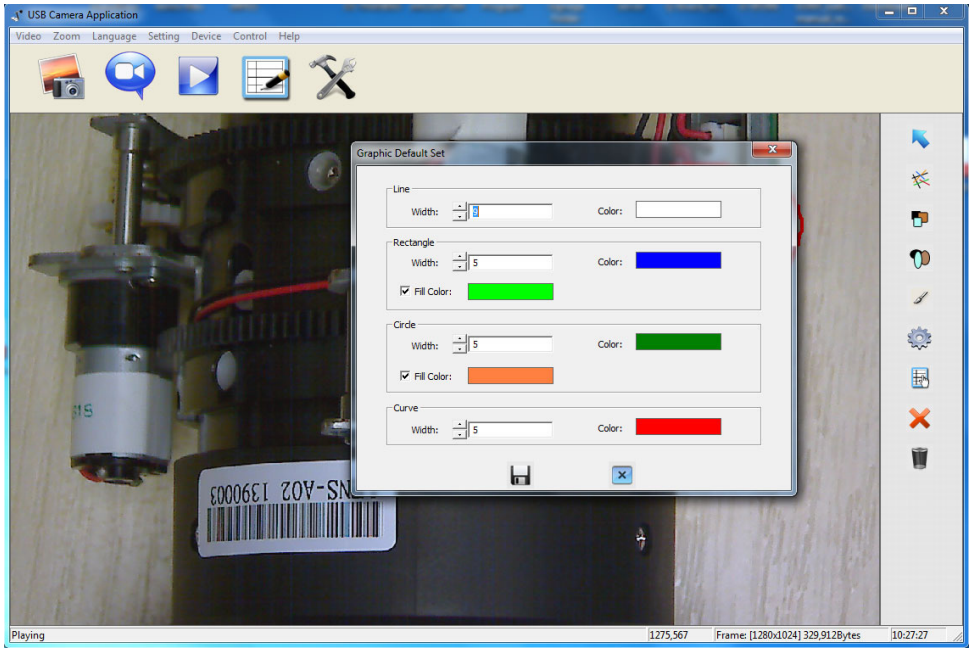


Click to change the setting of the chosen curve



Line width change the line width of the curve. **X/Y** change the position of the curve. **Color** change the line color of the curve.

Click to change the setting of the graphic



Graphic delete

Click to delete the chosen graphic.

Click to delete all graphics placed in the image.

SPECIFICATIONS

IMAGE		OTHER	
Sensor	1.2.5” CMOS	Input	VGA
Pixels	5 Megapixel	Output	HDMI and VGA
Frame Rate	20/30	Dimensions	Setup: 6.7”×19.1”×13.5” / Folded: 6.7”×7.2”×13.5”
Color adjustment	Yes	Weight (net)	4.4lbs/2kg
Rotation	90, 180 and 270 degrees	Power Supply	12V DC Power Adaptor
White balance	Auto/manual	Software Support	Microsoft Windows, Apple MAC OSX
Mirror Image	Yes		
Brightness adjustment	Yes		
Output resolution	SXGA, 720p, UXGA and 1080p		
Image split	Yes		
Image Freeze	Yes		
Video recording	Yes (via USB)		
Text mode	Yes		
Image capture	Yes (200 images Internal Memory)		
SD CARD Support	Yes (Max 32 GB)		
Remote Control	Yes		
Kensington Lock	Yes		
OSD	Yes		
OPTICS			
Focus	Auto/manual		
Shooting area	Max: 14.7”x11.1”, Min: 0.1”x0.1”		
Zoom	14 x optical, 16 x digital		

TROUBLE-SHOOTING

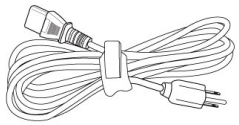
Symptoms	Possible causes/counter-measures
No Image	Power Cord is not connected Cables are not connected Power is turned off Output resolution not set correct
Image Bending	Camera is out-of-line, adjust the camera Press AUTO
Out of focus or blurring image	Object is too close to the lens Focus point is full ZOOM, press ZOOM minus to adjust Auto-focus is not on: press AUTO again

Dust or condensation could be on the lens, use a soft damp cloth to clean

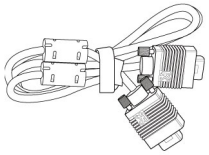
If the problem still remains after checking the above, consult your dealer or authorized service personal

Package Content

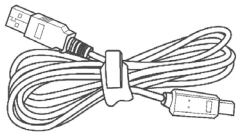
Item	Quantity
DC400i	1
Power cord	1
Power adaptor(12V/2A)	1
VGA cable	1
USB (2.0) cable	1
Remote control	1
AA batteries	1
User manual (CD)	1
Microscope Adapter	1



Power Cord

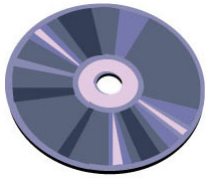


VGA Cable

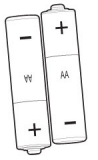


USB2 Cable

Microscope Adapter

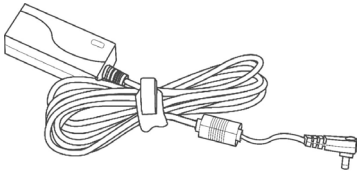


Software/ User Manual CD



AA Batteries

Remote Control



Power Adapter

DC400i